SPECIES STATUS OF *POROPUNTIUS BURTONI* (MUKERJI 1934), (CYPRINIFORMES: CYPRINIDAE) WITH A SYSTEMATIC NOTE ON *POROPUNTIUS CLAVATUS* (MCCLELLAND 1845)[1]

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(*With one plate and two text-figures*)

Key words: *Poropuntius burtoni*, *P. clavatus*, species validity

Poropuntius clavatus burtoni (Mukerji), originally described from Myanmar, has hitherto been considered a junior synonym of *P. clavatus* (McClelland). Based on detailed information from the type specimens and 19 specimens presently collected from the rivers of Ukhrul district of Manipur (Chindwin drainage), India, *P. burtoni* is now established as a valid species. The species differs from *P. clavatus* in having fewer lateral line scales (34-38 vs. 41-42), fewer predorsal scales (12-13 vs.14-15), fewer scale rows between dorsal fin origin and lateral line (6 vs.7), shallower body (26.3-29.4 vs. 29.5-32.9) and shorter dorsal spine length (22.6-28.5 vs. 28.9-31.4). *Poropuntius burtoni* is endemic in the Chindwin-Irrawaddy drainage, whereas *P. clavatus* occurs in the Barak-Brahmaputra drainage.

INTRODUCTION

Mukerji (1934) described *Barbus clavatus burtoni* from Mali Hka river, Myanmar (Irrawaddy drainage). He distinguished it from *P. clavatus clavatus* in size, certain body proportions and coloration. Jayaram (1991) put them under *Poropuntius* Smith in the appendix while revising the genus *Puntius* Hamilton. Smith (1931) distinguished *Poropuntius* from *Puntius* in having pores on the snout, lower jaw with horny sheath and a rostral groove. According to Rainboth (1996), the genus *Poropuntius* is characterised by the presence of open pores on the snout and posteriorly serrated last dorsal spine. Jayaram (1981) did not recognise *P. clavatus burtoni* as a species, but considered it to be a Burmese form. Talwar and Jhingran (1991), while describing *Puntius clavatus* (McClelland), did not mention Mukerji's specimen.

In the present study, 19 specimens of *Poropuntius* were collected from Ukhrul district, Manipur (Chindwin drainage). These specimens agree with the description of *P. clavatus burtoni*. However, on detailed examination of the specimens of *P. clavatus clavatus* in the Zoological Survey of India (ZSI) and typical specimens in the Manipur University Museum of Fishes (MUMF), which were collected from the Barak drainage, notable differences were found. In view of the differences in morphology and drainages which the fishes inhabit, *P. burtoni* is considered here to be a valid species.

MATERIAL AND METHODS

Specimens collected in the present study were deposited in MUMF. Type specimens of *Poropuntius burtoni* and other specimens of *P. clavatus* in ZSI and those in the MUMF were examined. Measurements and counts follow Jayaram (1981). Body proportions are expressed as percentages of standard length (SL) and head length (HL). Lateral transverse scales were counted as those between the lateral line and dorsal fin origin (including mid-dorsal scale), and those between the lateral line and pelvic fin origin.

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Poropuntius burtoni (Mukerji 1934)
(Plate 1, Fig. 1)

Barbus clavatus burtoni Mukerji, 1934, *J. Bombay nat. Hist. Soc. 37(1)*: 64-67. *Poropuntius clavatus* Jayaram, 1991, *Rec. zool. Surv. India. Occ. Paper 135*: 178.

Local Name: Nung-nga (Manipuri); Rar, Ngapeila (Tangkhul); Aasho (Chakasang).

Material examined: Holotype, ZSLF 11437/1, 107.5 mm SL, Phungin Hka, tributary of Mali Hka River, Myitkyina dist., Upper Myanmar, Coll. R.W. Burton, no date; Paratype, ZSI F1 1462/1, 1 ex., 155.0 mm SL, same data as holotype; 8 exs., MUMF 2061-2068, 84.0-136.0 mm SL, Kongpu river, Bungpa, Ukhrul district, Manipur, Coll. L. Kosygin, 4.vi.1994, 1 ex., MUMF 2005, 95.0 mm SL, Laniye river near Jessami, Manipur-Nagaland state border, 2.ii.1994; 5 exs., MUMF 2028-2032, 93.5-106.5 mm SL, Wanze stream, Khamsom, 20.v.1994; 2 ex., MUMF 2112-2113, 39-40 mm SL, Chal ou river, Thetsi, Manipur-Nagaland state border, 1.vi.1994; 3 exs., MUMF 2195-2197, 27.5-109.0 mm SL, Tizu river at Akash Bridge, near Thetsi 15.viii.1994.

Diagnosis: A species of *Poropuntius* with 34-38 lateral line scales. 6/1/4 lateral transverse scales; 12-13 predorsal scales; body depth 26.3-29.8% of SL; dorsal fin height 22.6-28.5% of SL.

Description: D. iv, 8; P. i, 16; V. i, 8; A. iii, 6; C. 19; L.1. 34-38; L.tr. 6/1/4, Body compressed. Dorsal profile arched from snout tip to dorsal fin origin, then gently sloping down to caudal fin base. Head short, conical. Snout obtusely pointed, longer than eye diameter in adults. Its tip studded with small tubercles. Eye moderately large, not visible from ventral surface. Inter-orbital space convex, slightly greater than eye diameter. Mouth horse-shoe shaped, sub-inferior, cleft of mouth extending nearly to the level of anterior margin of the orbit. Barbels 2 pairs, one each of maxillary and rostral, both

TABLE 1
COMPARISON OF MORPHOLOGICAL CHARACTERS OF *POROPUNTIUS BURTONI* AND *P. CLAVATUS*

	P. burtoni			*P. clavatus*		
ZSI F 11462/1	Holotype ZSI F 1143/1	Paratype ZSI F 11462/1	Present study	ZSI FF 1629	ZSI F 9936/1	MUMF 2265-2267
N		1	19	1	1	3
In % of SL						
Body depth	27.9	28.0	27.9(26.3-29.4)	32.9	31.8	30.1(29.5-30.5)
Head length	23.7	22.3	24.5(22.6-25.7)	22.6	22.6	22.3(22.1-22.6)
Predorsal length	47.4	47.1	49.1(46.7-50.8)	48.5	49.2	48.9(47.8-49.6)
Dorsal fin height	26.0	27.7	24.6(22.6-28.5)	31.4	30.9	29.1(28.9-29.8)
In % of HL						
Head width	52.9	71.0	56.1(52.1-63.3)	58.2	51.8	58.8(55.9-61.3)
Head height at occiput	78.4	75.4	75.8(70.1-81.3)	80.0	75.0	77.8(74.3-80.8)
Snout length	29.8	31.9	32.1(29.8-35.1)	30.9	30.3	30.7(28.9-32.3)
Eye diameter	29.4	28.9	23.9(21.2-26.1)	29.1	30.4	27.5(26.9-28.4)
Interorbital space	33.3	34.8	32.8(28.9-34.9)	32.7	32.1	37.4(35.5-40.0)
Pectoral fin length	86.3	91.3	84.1(78.7-89.3)	96.4	100.0	96.2(95.2-96.9)
Counts						
Pectoral fin rays	i, 16	I, 16	i, 16	i, 15	-	i, 14-15
Lateral line scales	35	34	34-38	42	41	41-42
Lateral transverse scales	6/1/4	6/1/4	6/1/4	7/1/4	7/1/4	7/1/4

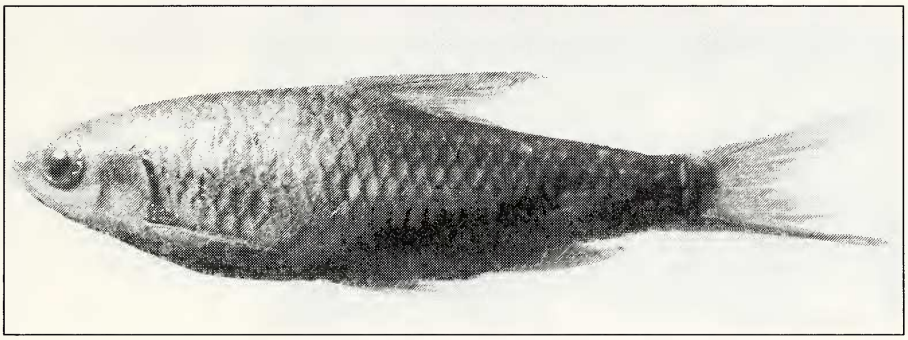

Fig. 1: *Poropuntius burtoni* (Mukerji)

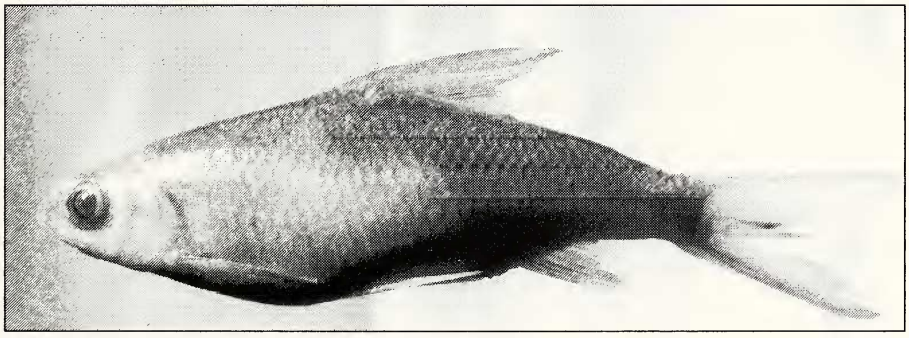

Fig. 2: *Poropuntius clavatus* (McClelland)

as long as eye diameter. Scales large, 12-13 scales in front of dorsal fin origin. Lateral line complete. Dorsal spine strong, osseous, serrated posteriorly, its origin equidistant from snout tip and caudal fin base. Pectoral fins slightly shorter than head length, not reaching pelvic fin origins. Caudal fin forked.

Proportional measurements (in percentage): Body depth 27.9 (26.3-29.4); head length 24.5 (22.6-25.7); predorsal length 49.1 (46.7-50.8); dorsal fin base length 14.9 (14.0-16.0); dorsal fin height 24.6 (22.6-28.5); and caudal fin length 27.4 (25.0-29.8)% of SL. Head width 56.1 (52.1-63.3); head height at occiput 75.8 (70.4-81.3); snout length 32.1 (29.8-35.1); eye diameter 23.9 (21.2-26.1); interorbital space 32.8 (28.9-34.9); pectoral fin length 84.1 (78.7-89.3); and caudal peduncle length 90.2 (85.5-98.0)% of HL. Dorsal fin height 88.8 (82.0-100.0)% of body depth. Caudal peduncle height 52.2 (48.9-58.8) % of its length.

Colour: Body silvery with darker dorsal surface. A few rows of scales are dotted with fine blackish pigment. All the fins light orange. Outer edge of caudal fin tipped with black.

Distribution: INDIA: Manipur (Chindwin basin); Myanmar: Myitkyina District, Irrawaddy drainage.

Remarks: Mukerji (1934) emphasised the size of the fishes while separating the Chindwin form of *Poropuntius* from the Brahmaputra form, i.e. *P. clavatus clavatus* of the genus. He reported that the maximum size of the Chindwin form was 172 mm SL and that of Brahmaputra, only 120 mm. Sen (1985) mentioned that the largest specimen recorded for the latter was 7 inches (=178 mm), while the specimens collected from Barak river (MUMF) measure about 195 mm in SL.

Thus, the comparative sizes cannot be the basis for separating the two forms. *P. burtoni* is distinguished from *P. clavatus* in having fewer lateral line scales (34-38 vs. 41-42); fewer predorsal scales (12-13 vs. 14-15); fewer scale rows between dorsal origin and lateral line (6 vs. 7) shallower body (26.3-29.4 vs. 29.5- 32.9) and shorter dorsal fin height (22.6-28.5 vs. 28.9-31.4). Thus, *P. burtoni* is given specific status in the present study. Figs 1 and 2 compare the body depths and spine lengths of the two species.

Poropuntius clavatus (McClelland 1845)
(Plate 1, Fig. 2)

Barbus clavatus McClelland, 1845. *Calcutta J. nat. Hist.*, 280, pl. 21 (type locality: Sikkim mountains on the northern frontier of Bengal).

Puntius clavatus: Menon, 1974, *Inland Fisheries Soc. of India,* Spl. Pub. 1:38.

Poropuntius clavatus: Jayaram, 1991, *Rec. zool. Surv. India*, 135: 172.

Local name: Nung-nga (Manipuri).

Material examined: 1 ex., ZSIFF 1629, 121.5 mm SL, Jatinda river, Assam, India, Coll. S.C. De, no date; 1 ex., ZSI F 9936/1, 124.0 mm SL, Karong, Naga Hills, Manipur, Coll. S.L. Hora, no date; 3 ex., MUMF 2265-2267, 168.8-195.5 mm SL, Barak river, Sekjang Tuifai, Manipur, India, Coll. Ch. Bashuda, 14.ii.1997.

Diagnosis: A species of *Poropuntius* with 41-42 lateral line scales; 7/1/4 lateral transverse scales; 14-15 predorsal scales; body depth 29.5-32.9% of SL; dorsal fin height 28.9-31.4 % SL.

Distribution: INDIA: Assam, Manipur (Brahmaputra basin), Sikkim, West Bengal; Bangladesh.

Remarks: McClelland (1845) described *P. clavatus* from Sikkim, India. Menon (1974) considered *P. burtoni* a junior synonym of *clavatus* and extended the distribution of the fish to Myanmar. However, from the present study it is clear that they are two distinct species. Thus, *P. clavatus* is distributed only in the north-eastern part of India and Bangladesh.

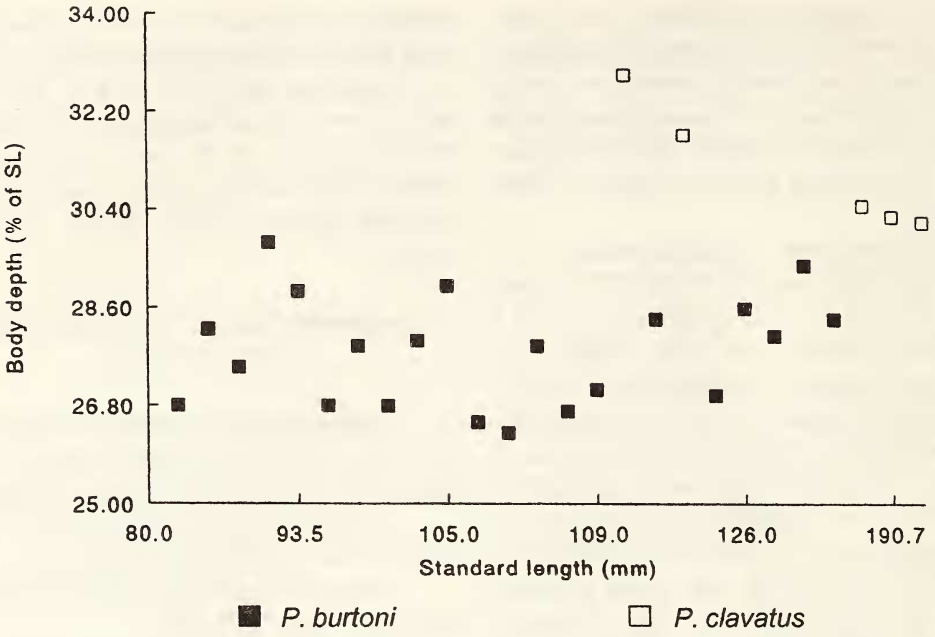

Fig. 1: Relationship between body depth and standard length of *P. burtoni* and *P. clavatus*

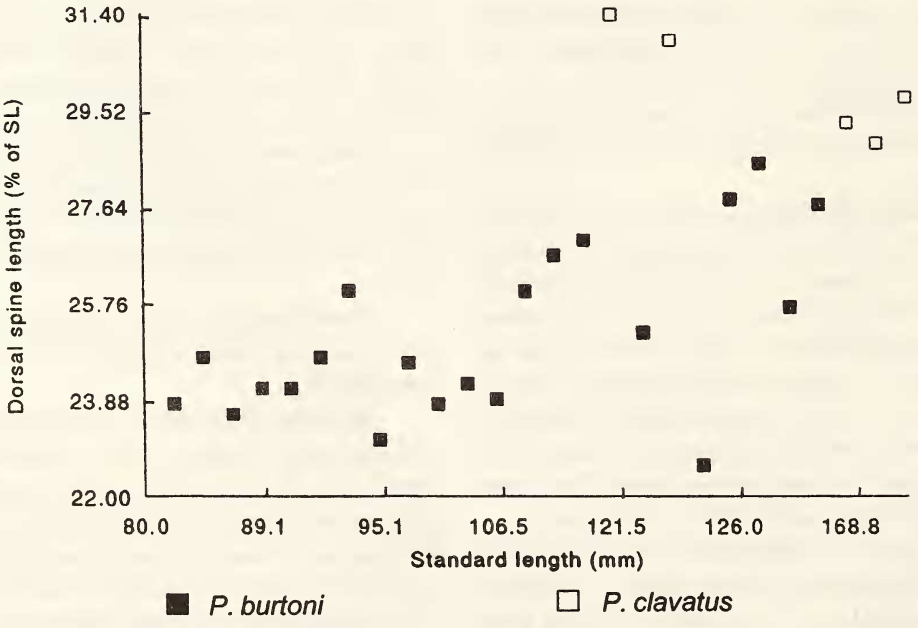

Fig. 2: Relationship between dorsal spine length and standard length of *P. burtoni* and *P. clavatus*

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REFERENCES

JAYARAM, K.C. (1981). Freshwater fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka. Handbook, Zoological Survey of India, Calcutta. 475 pp.

JAYARAM, K.C. (1991): Revision of the genus *Puntius* Hamilton from the Indian region (Pisces: Cypriniformes, Cyprinidae, Cyprininae). *Rec. zool. Surv. India, Occ. Paper 135*: 178.

MENON, A.G.K. (1974): A checklist of fishes of the Himalayan and the Indo-Gangetic Plains. *Inland Fisheries Society India (Special publication No.* 1), 136 pp.

MCCLELLAND, J. (19451845): Description of four species of fishes from the rivers at the foot of the Boutan Mountains. *J. Nat. Hist. Calcutta 5(18)*: 274-282, pl. 21.

MUKERJI, D.D. (1934): Report on the Burmese fishes collected by Lt. Col. R.W. Burton from the tributary streams of Mali Hka River of Myitkyina District (Upper Burma) 2. *J. Bombay nat. Hist. Soc. 37(1)*: 38-80.

RAINBOTH, W.J. (1996): Fishes of the Cambodian Mekong. Food and Agriculture Organisation of the United Nations, Rome, 265 pp, 27 pls.

SEN, T.K. (1985): The fish fauna of Assam and the neighbouring northeastern states of India. *Rec. zool. Surv. India, Occ. paper 64*: 216.

SMITH, H.M. (193 1). Description of new genera and species of Siamese fishes. *Proc. U.S. Natn. Mus. 79(7)*: 1-48.

TALWAR, P.K. & A.G. JHINGRAN (1991): Inland Fishes of India and adjacent countries, Vol 1, Oxford and IBH Publ. Co. Pvt. Ltd., New Delhi, 541 pp.

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